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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,056	02/17/2004	Hugh L. Brunk	P0933	8385

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DIGIMARC CORPORATION
9405 SW GEMINI DRIVE
BEAVERTON, OR 97008

EXAMINER

TABATABAI, ABOLFAZL

ART UNIT	PAPER NUMBER
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2625

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/781,056 ✓

Applicant(s)

BRUNK, HUGH L.

Examiner

Abolfazl Tabatabai

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claim 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (U S 5,790,703) in view Rhoads et al (U S 5,832,119).

Regarding claim 1, Wang discloses an image processor for determining geometric distortion of an image; the process comprising:

a halftone screen threshold analyzer for creating a target orientation signal by applying a halftone screen threshold mask to image data from a received image (column 4, lines 9-22; 39-49; column 7, lines 35-38 and column 11, lines 22-26).

However, Wang is silent about the specific details regarding the step of:

a correlation operator for correlating the target orientation signal with the received image in a correlation domain, the correlation operator producing one or more orientation parameters estimating geometric distortion of the image.

In the same field of endeavor (watermarking), however, Rhoads discloses method for controlling systems using control signals embedded in empirical data comprising the step of:

a correlation operator for correlating the target orientation signal with the received image in a correlation domain (column 37, lines 61-65 and column 64, lines 4-12), the correlation operator producing one or more orientation parameters (column 75, lines 9-21) estimating geometric distortion of the image (column 14, lines 57-65 and column 44, lines 52-59).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a correlation operator for correlating the target orientation and estimate geometric distortion of the image as taught by Rhoads in the system of Wang because Rhoads provides Wang an improved system which relates to control of system which a video signal is encoded with a usage control signal. The encoding processes the video in accordance both with the usage control signal and a global scaling parameter. One of the important advantageous inherent in such system is the high degree of statistical confidence (confidence which doubles with each successive bit of the identification code) that a match is really a match.

Regarding claim 2, Wang discloses the processor of claim 1 wherein the orientation parameter is used to re-align the image to facilitate decoding of a watermark from the re-aligned image (fig. 1 element 40; column 2, lines 31-33 and column 10, lines 28-37).

Regarding claim 3, Wang discloses the processor of claim 2 wherein the watermark carries a message of one or more symbols (fig. 1 element 40 and column 2, lines 4-11).

Regarding claim 4, Wang discloses the processor of claim 2 wherein the watermark is analyzed to detect alteration of the image (fig. 1 element 40 and column 10, lines 52-56).

Claim 5, is similarly analyzed as claim 1 above.

Claim 6, is similarly analyzed as claim 2 above.

Claim 7, is similarly analyzed as claim 3 above.

Claim 8, is similarly analyzed as claim 4 above.

Regarding claim 9, Wang discloses a method of embedding a digital watermark in a halftone image, the method comprising:

receiving an input image (column 6, lines 37-42);

modifying the input image to embed a digital watermark in the input image and to convert the input image into a halftone image (column 5, lines 56-67 and column 6, lines 42-49); wherein the modifying includes applying a halftone screen to the input image (column 4, lines 9-22).

However, Wang is silent about the specific details regarding the step of:

the halftone screen being formed such that application of the halftone screen to the halftone image produces an orientation signal from which geometric distortion of the halftone image is derived.

In the same field of endeavor (watermarking), however, Rhoads discloses method for controlling systems using control signals embedded in empirical data comprising the step of:

the halftone screen being formed such that application of the halftone screen to the halftone image produces an orientation signal from which geometric distortion of the halftone image is derived (column 14, lines 57-65 and column 44, lines 52-59).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use an orientation signal from which geometric distortion of the halftone image is derived as taught by Rhoads in the system of Wang because Rhoads provides Wang an improved system which relates to control of system which a video signal is encoded with a usage control signal. The encoding processes the video in accordance both with the usage control signal and a global scaling parameter. One of the important advantageous inherent in such system is the high degree of statistical confidence (confidence which doubles with each successive bit of the identification code) that a match is really a match.

Regarding claim 10, Wang discloses the method of claim 9 wherein the digital watermark carries variable message symbols that are machine readable from printed versions of the halftone image (column 6, lines 37-49).

Regarding claim 11, Wang discloses the method of claim 9 wherein the modifying includes:

converting the input image to a target resolution of the halftone image (column 6, lines 37-49);

combining the converted image with the digital watermark to form a watermarked image (column 8, lines 37-43 and column 10, lines 2-8); and,

applying the halftone screen to the watermarked image (column 6, lines 37-49).

Claim 12, is similarly analyzed as claim 9 above.

Claim 13, is similarly analyzed as claim 1 above.

Other Prior Art

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Knox (U S 5,734,752) discloses digital watermarking using stochastic screen patterns.

Curry (U S 5,946,103) discloses halftone patterns for trusted printing.

Wang et al (U S 6,526,155 B1) disclose systems and methods for producing visible watermarks by halftoning.

Yen et al (U S 6,839,450 B2) disclose detection halftone modulations embedded in an image.

Contact Information

4. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to ABOLFAZL TABATABAI whose telephone number is (571) 272-7458.

The Examiner can normally be reached on Monday through Friday from 9:30 a.m. to 7:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Mehta Bhavesh M, can be reached at (571) 272-7453. The fax phone number for organization where this application or proceeding is assigned is (703) 872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Abolfazl Tabatabai

Patent Examiner

Group Art Unit 2625

May 10, 2005

A-Tabatabai



KANJIBHAI PATEL
PRIMARY EXAMINER